	Group A	Group B	P
SD	(16%)	(4%)	0.01
Sub maximal test	(24%)	(6%)	0.01
Average D dose	42 ± 7	36 ± 0	0.01

1151-143 Regional Wall Motion Abnormalities During Dobutamine Stress Echocardiography in Patients With Systemic Sclerosis

Roberta Montisci, Massimo Ruscazio, Alessandra Vacca, Pietro Garau, Giuseppe Passiu, Alessandro Mathieu, Sabino Iliceto, Luigi Meloni, University of Cagliari, Cagliari, Italy

Background: Systemic sclerosis (SSc) is a chronic connective tissue disorder of unknown etiology, characterized by cutaneous and visceral involvement.The pathogenesis of the cardiac lesion in SSc is controversial, but the primary disorder of microvasculature with diffuse arteriolar and capillary lesions could precede any fibrosis, thus causing ischemic disorder to the heart. Dobutamine stress echocardiography (DSE) is a sensitive predictor of coronary artery disease. This study was performed to assess the value of DSE for noninvasive diagnosis of cardiac involvement in patients with SSc without clinical evidence of heart disease and to determine if abnormal responses to dobutamine can be explained by a decreased coronary flow velocity reserve (CFVR)
Methods: We studied 27 patients with SSc without clinical evidence of heart disease, (15 with diffuse form and 12 with localized form of SSc), age 54±12. All patients underwent high dose DSE testing (5-40 mcg/kg/min) and evaluation of CFVR in the left anterior descending coronary artery with contrast transthoracic Doppler during adenosine infusion (140 µg/Kg/min in 5 minutes). Patients were divided into two groups based on the absence (group A; n=15) or presence (group B; n=13) of regional wall motion abnormalities (RWMA) on DSE.
Results: In 13 out of 28 pts (46%) with SSc, we found RWMA during DSE with patchy distribution. Both groups showed normal CFVR values (group A, 2.76±0.7; group B, 2.26±0.4), but CFVR in group B was statistically reduced compared to group A (p=0.03).
Conclusion: This study showed that many patients with SSc, without clinical evidence of heart disease, have inducibile RWMA during DSE with patchy distribution. Furthemore, CFVR reduction suggests the role of a partial coronary microvascular dysfunction in these group of patients.

1151-144 Distal Left Anterior Descending Flow Reserve by Dobutamine Versus Adenosine Transthoracic Doppler Echo During Conventional Dobutamine Echocardiography: Feasibility and Accuracy for Left Anterior Descending Patency

George Athanassopoulos, G. Hatzigeorgiou, N. Koutsogiannis, G. Karatasakis, D. V. Cokkinos, Onassis Cardiac Surgery Center, Athens, Greece

Background: There are a few data for coronary flow reserve (CFR) post dobutamine (D)infusion.
We aimed to evaluate the diagnostic accuracy for significant LAD stenosis using CFR either during DSE or post adenosine (AD)infusion.
Patients-Methods: We studied 101 consecutive pts (age 59+9, 17 women) with known or suspected CAD who were referred for DSE .
CFR was estimated:
1. at the stage of 30mg/kg/min of DSE (CFRdob)
2. 30 minutes post DSE after adenosine (CFRaden).
All pts underwent coronary angiography within a period <3months.
Results:
1. Distal LAD flow was detected in all 101 pts (feasibility 100%). In 4/101 pts, contrast had to be used. Distribution of LAD stenosis was as follows: 70%: 21 pts (12 with a >90% stenosis).
2. ROC analysis for prediction of LAD % diameter stenosis gave the following results :

LAD% stenosis	CFR	Cut off	Sens	Spec	p
>50	aden	1.82	0.51	0.98	<0.0001
>50	dob	1.3	0.3	0.80	=0.06
>70	aden	1.8	0.92	0.94	<0.00001
>70	dob	1.3	0.52	0.84	<0.0001

CFR values for both Aden and Dob were related with % LAD diameter stenosis with cube function :
CFR adenosine = -4.7 (LAD%)3 +0.00056(LAD%)2-0.034(LAD%)+3.2 (F=34.5, p<0.00001)
CFR dobutamine = -0.000063 (LAD%)3 +0.00087(LAD%)2-0.0378(LAD%)+2.2 (F=12, p<0.00001)
CFR aden and CFR dob were concordant for LAD patency in 77 % of pts (kappa coefficient 0.37 (p70% was 0.59, and it increased to 0.79 in stenosis<70%.
Conclusions:
1. High-resolution ultrasound enhances feasibility of LAD CFR
2. CFR by AD has excellent accuracy for LAD stenosis interrogation.
3. CFR evaluated at DSE has lower values than CFR by adenosine. However, CFR estimated during DSE has great specificity to exclude significant LAD stenosis.

1151-145 Accuracy of Strain Rate Techniques for Identification of Viability at Dobutamine Stress Echo: A Follow-Up Study After Revascularization

Lizelle Hanekom, Carly Jenkins, Leanne Short, Thomas H. Marwick, University of Queensland, Brisbane, Australia

Background. Myocardial viability (VM) assessment based on wall motion scoring (WMS) with dobutamine echo (DbE) is difficult and subjective. New quantitative techniques such as strain rate imaging (SRI) correspond with isotopic techniques but their ability to predict functional recovery (FR) after revascularization is unclear.
Methods. Stable post-MI pts (n=43, age 63±9, EF 36±6%) underwent SRI during DbE. WMS evidence of VM was based on lowdose augmentation at DbE. SR, end-systolic strain (ESS), post-systolic strain (PSS) and timing were analyzed at rest and low dose in abnormal segts. Pts were followed for 9±12 months; FR was defined as segt improvement on post-revascularization images.
Results: Of 180 segts with abnormal resting function, 83 showed FR and 97 did not. Resting parameters were not predictive of recovery; resting post-systolic shortening had a sensitivity and specificity <50%. Viable vs nonviable segts showed differences in low-dose SR (0.9±0.6 vs 0.4±0.5/s, p<0.001, optimal cutoff >0.6), SR increment (0.5±0.5 vs 0.1±0.6/s, p<0.001, cutoff >0.23), ESS (11.6±9.2 vs 4.7±9.3, p<0.001, cutoff >8.5), ESS increment (4.9±9.9 vs 0.7±6.2, p<0.001, cutoff >3.4) and time to ES (0.31±0.9 vs 0.38±0.09, p<0.001, cutoff <0.32). Sensitivity and specificity of quantitative parameters were comparable to WM analysis (Table).
Conclusions. SR and strain responses to DbE are a feasible marker of viability, comparable to WM assessment.

	WM scoring	Lowdose SR	SR increment	Lowdose ESS	ESS increment	t end-systole
Sensitivity (83 recovered)	69%	69%	70%	69%	60%	59%
Nonviable (97 no recovery)	62%	57%	53%	65%	63%	77%

1151-146 Assessment of Myocardial Viability in Patients With Myocardial Infarction: Comparison of Contrast-Enhanced Magnetic Resonance Imaging With Dobutamine Stress Echocardiography

Konomi Sakata, Hideaki Yoshino, Kentarou Nakamura, Hidehiko Houshaku, Shuuhei Matue, Shinobu Yamane, Mitufumi Furuya, Shinya Tuji, Kyorin University School of Medicine, Tokyo, Japan, Japan

Background: Contrast-enhanced magnetic resonance image (CE-MRI) has been shown to identify necrotic tissue in ischemically damaged myocardium. Low-dose dobutamine stress echocardiography (LDSE) is used for assessment of myocardial viability.
Objective:We sought to compare CE-MRI with LDSE for assessment of myocardial viability in patients with myocardial infarction. Methods: Fifty-two patients with acute myocardial infarction underwent CE-MRI and LDDSE. All patients treated with angioplasty and stenting in the acute phase. Delayed CE-MRI contrast enhancement patterns were examined 15 minutes after injection of 0.1 mmol/kg gadolinium diethylenetriamine pentaacetic acid (Gd-DTPA). LDSE protocol (5 and 10 ug/kg/min in 5-minute) was used. The transmural extent of hyperenhanced regions was postulated to represent the transmural extent of non-viable myocardium. The extent of regional contractility at the same locations was determined by LDSE. Regional wall motion was assessed with a 16-segment model. Results: Three hundred sixty three of the 832 myocardial segments were analyzed to infarct segments, and 263 infarct segments analyzed had viability by LDSE. Two hundred forty nine of the 263 viable myocardial segments (95%) had subendocardial hyperenhancement by delayed CE-MRI. By LDSE, 100 infarct segments were analyzed to non-viable myocardium, and 87 of the 100 non-viable segments (87%) had the transmural extent of hyperenhancement by delayed CE-MRI, and the remain 13 segments had hyperenhancement more than 75percent transmural extent of myocardial tissue of tissue (mean: 82+/-5%).Conclusions: Delayed CE-MRI and LDSE allow assessment of myocardial viability with myocardial infarction. LDSE and delayed CE-MRI have a good correlation in evaluation of myocardial viability.

1151-147 Incremental Value of Transient Poststress Left Ventricular Dysfunction After Dobutamine-Atropine Stress Echocardiography

Chiara Pedone, Jeroen J. Bax, Vittoria Rizzello, Elena Biagini, Jos R.T.C. Roelandt, Don Poldermans, Thoraxcenter Erasmus MC, Rotterdam, The Netherlands, S.Orsola University Hospital, Bologna, Italy

Background: Dobutamine stress echocardiography (DSE) is an established technique for the diagnosis of coronary artery disease (CAD). Ischemia is defined by regional reduction of myocardial thickening or inward motion of endocardial borders. However, the evaluation of DSE is subjective and experience dependent and would be improved by additional objective parameters. The aim of the study was to test the additional role of volumes changes during DSE for the assessment of the extent of myocardial ischemia.
Methods: The study includes 100 consecutive patients with suspected or known CAD (mean age 61± 11 years; 73% males) referred for DSE: 50 patients with and 50 without stress-induced ischemia assessed by new wall motion abnormalities, using a 16-segment, 5-point score. All cardiac risk factors and hemodynamics during DSE were noted. Ventricular volumes were measured with Biplane Simpson's method at the main DSE stages (rest, low dose, peak and recovery).
Results: In 50 patients with documented ischemia male gender, angina pectoris were more frequent (p < 0.001). No differences were noted between the two groups in respect